Intel® Atom™ Processor E3800

HS-UART Driver Release Notes

1. Driver Information

This is the main HS-UART driver (32bit and 64bit) for the Bay Trail-I platform for Win7 and WES7

- Driver name
  iaiouart.sys
  "Intel® Atom™/Celeron®/Pentium® Processor UART Host Controller" in device manager list
- Version
  1.1.5.1021
- Release Data
  3/10/2014
- List of files in the driver package
  - Driver binaries
    iaiouart.inf
    iaiouart.sys
    iaiouart.cat
  - Driver documents
    BYT-I_Win7_IODriver_Programmer_Guide.docx
    ISG_BYT-I_HSUART_Driver_Release_Note.docx

2. System Requirement

- Supported Platform
  Baytrail-I Fab3 Rev3 (SKU: B3)
  Bakersport Fab B (SKU: B3)
  Windows 7 Ultimate 64 bit SP1 (7601)
  Windows 7 Ultimate 32 bit SP1 (7601)
  Windows Embedded Standard 64 bit SP1 (7601)
  Windows Embedded Standard 32 bit SP1 (7601)
- Development Environment
  Windows 7 64 bit SP1 (7601)
  Microsoft Visual Studio Professional 2012 Version 11.0.50727.1 RTMREL
  MSBuild 4.0.30319.17929
  Windows Driver Kit 8.0.0
- Dependency
  N/A
- Constraint
  N/A

3. Enabled Features

- Hardware features
  - Support baud rates: 300 – 921600, up to 3686400 by default as specified in the **"Bay Trail-I SoC External Design Specification"** document, *Section 27.2.3 Baud Rate Generator*.
    For setting baud rates of 1M, 2M, 3M, and 4M, see BKM section below.
  - Support data size of 5,6,7, and 8-bit
  - Support none, odd and even parity
  - Support 1, 1.5, and 2 stop bits
  - Support "Hardware" and "No" flow control and software flow control
- Software features
  - Supports Serial Device Control Requests (IOCTLs) defined by MSFT for serial controllers in Windows. See Limitations below for the IOCTLs that will be enabled in Gold release.

4. Disabled features

- Following IOCTLs are not supported in 1.1.5.1020 driver:
  IOCTL_SERIAL_SET_WAIT_MASK
  IOCTL_SERIAL_GET_WAIT_MASK
  IOCTL_SERIAL_WAIT_ON_MASK
  IOCTL_SERIAL_XOFF_COUNTER
  IOCTL_SERIAL_LSRMST_INSERT
  IOCTL_SERIAL_SET_BREAK_ON
  IOCTL_SERIAL_SET_BREAK_OFF

5. Known Issues

- HSD [4634842] Intermittent first byte lost when perform I2C read on B3-M and B3-D for HS-UART.
- HSD [4634766] H/W repeatly set UART2 MSR register Bit 0 to 1 and trigger unexpected interrupt repeatedly.
- HSD [4634724] On Baytrail-I, Win7 uart driver has no support to IOCTL_SERIAL_SET_WAIT_MASK IOCTL_SERIAL_WAIT_ON_MASK
- HSD [4634839] on Bayley Bay board the CTS line of UART2 doesn't work occasionally when does duplex transfer in high speed on Win7

6. Fixed Issues or New Features

- N/A

7. Limitations

- When 1.5 stop bits is used, the data size can only be supported up to 5 bits.
- Software flow control does not support DMA transfer
- Software flow control baud rate must not more than 115200. Recommended to use hardware flow control for data transfer for high baud rate.

8. BKM

- Setting up HS-UART baud rates

By default the driver supports baud rates as listed in *27.2.3 Baud Rate Generator* in the **"Bay Trail-I SoC External Design Specification"** documentation. For other baud rates, we need change the register setting. Please refer to the BKMs in the Win7 IO driver **"User Guide for Win7_WES7 BSP Baytrail-I_v1.0.0" document.**

9. Installation Guide

- Execute Intel Atom E3800 Win7 IO Drivers 64Bit.msi to install 64bit driver
- Execute Intel Atom E3800 Win7 IO Drivers 32Bit.msi to install 32bit driver
- Uninstall the driver from Control Panel\All Control Panel Items\Programs and Features or Uninstall the driver by click MSI installer again.

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